

## ABSTRACT

An assembly method of a preload-adjustable rolling bearing unit comprising the steps of providing a shaft having a first inner raceway, an inner ring being press  
5 fitted onto the shaft and having a second inner raceway, such that a pitch of both raceways is set greater than a pitch required to give a predetermined preload, providing an outer ring having outer raceways, providing a plurality of balls to be fitted between the outer raceways of the  
10 outer ring, and the first and second inner raceways, positioning the balls equidistant apart in the circumferential direction, and vibrating the rolling bearing unit by means of piezo electric elements while moving the inner ring in the axial direction, measuring the  
15 resonant frequency of the rolling bearing unit with a vibration sensor to control the preload whereby the inner ring is pressed onto a shaft while vibrating with only a small amount of energy without scratching the raceway and rolling surfaces.